

What is claimed is:

1           1. A manufacturing method for an electronic device,  
2 comprising:

3           a hole-forming step of forming a contact hole in an  
4 insulating film that covers a conductive part formed on a first  
5 main surface of a substrate and an area surrounding the conductive  
6 part, the hole being formed beside the conductive part, and the  
7 conductive part including a first material;

8           a material-supplying step of supplying a second material  
9 to the contact hole, the second material having a reactive  
10 property with the first material; and

11          an inspection step, after the second material has been  
12 supplied, of inspecting for evidence of a reaction by the  
13 conductive part with the second material.

1           2. The manufacturing method of Claim 1, wherein  
2           the reactive property of the second material causes the  
3 conductive part to be eroded on contact with the second material,

4 and

5           in the inspection step, evidence that the conductive part  
6 has been eroded is inspected for.

1           3. The manufacturing method of Claim 2, wherein

2           in the inspection step, evidence of erosion is inspected  
3   for optically.

1           4. The manufacturing method of Claim 3, wherein  
2           in the inspection step, evidence of erosion is inspected  
3   for after removing the second material from the contact hole.

1           5. The manufacturing method of Claim 4, wherein  
2           the first material is one of tungsten and a tungsten alloy,  
3   and  
4           the second material is a solution including one of hydrogen  
5   peroxide and ozone.

1           6. The manufacturing method of Claim 5, wherein  
2           in the material-supplying step, the solution is supplied  
3   to the contact hole under a condition by which the solution is  
4   able to selectively erode the conductive part.

1           7. The manufacturing method of Claim 1, wherein  
2           the electronic device is a memory device that includes  
3   a plurality of components that function as field effect  
4   transistors, and  
5           the conductive part is a function electrode that is formed  
6   before the hole-forming step by applying a design rule that

7 stipulates an electrode width of 0.18 $\mu$ m or less.

1           8. The manufacturing method of Claim 3, wherein  
2           the conductive part includes a large-area portion that  
3           is sufficient in size to enable inspection thereof with an optical  
4           microscope for evidence of the reaction, and  
5           in the inspection step, evidence of the reaction in the  
6           large-area portion is inspected for.

1           9. The manufacturing method of Claim 2, wherein  
2           in the inspection step, after a material including at least  
3           the second material has been removed, presence of at least one  
4           of the first material and a compound of the first material and  
5           the second material is inspected for in the removed material.

1           10. The manufacturing method of Claim 1, wherein  
2           the substrate has a pre-formed inspection area that is  
3           independent of other circuits areas,  
4           in the material-supplying step a contact hole formed in  
5           the inspection area is subject to the inspection, and  
6           in the inspection step, a conductive part formed in the  
7           inspection area is subject to the inspection.

1           11. The manufacturing method of Claim 1, wherein

2           in the hole forming step, the contact hole is formed using  
3        a self-align contact method.

1           12. The manufacturing method of Claim 11, wherein  
2        a silicon nitride film is provided on the substrate as  
3        an etching stopper layer in the hole forming step.

1           13. The manufacturing method of Claim 12, wherein  
2        the insulating film is formed of boron phosphorus silicon  
3        glass, and  
4        the first material has an etching selectivity ratio of  
5        100 or higher in relation to material that composes the etching  
6        stopper layer and material that composes the insulating film.

1           14. An electronic device, comprising:  
2        a substrate on which a plurality of circuit areas are  
3        formed; and  
4        an insulating layer formed on a first main surface of the  
5        substrate,  
6        wherein at least one of the circuit areas is an inspection  
7        area that is independent of other circuits areas, and includes  
8        a conductive part and a contact hole, the conductive part being  
9        formed in the insulating film, and the contact hole neighboring  
10      a periphery of the conductive part.

1           15. The electronic device of Claim 14, wherein  
2           the conductive part includes a large-area portion that  
3           is inspected using an optical microscope.

1           16. The electronic device of Claim 15, wherein  
2           the inspection area is formed in a scribe area that is  
3           used as a cutting margin when cutting the other circuit areas  
4           from the substrate.

1           17. The electronic device of Claim 16, wherein  
2           the conductive part is composed of a material that has  
3           an etching selectivity ratio of 100 or higher in relation to  
4           a material that composes the insulating film.